MONROE COUNTY, FLORIDA

10-YEAR WATER SUPPLY FACILITIES WORK PLAN

Prepared By:

Monroe County Growth Management Department

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1.0 INTRODUCTION

The purpose of the Monroe County Water Supply Facilities Work Plan (Work Plan) is to identify and plan for the water supply sources and facilities needed to serve existing and new development within the local government's jurisdiction. Chapter 163, Part II, F.S., requires local governments to prepare and adopt Work Plans into their comprehensive plans within 18 months after the water management district approves a regional water supply plan or its update. The *Lower East Coast Water Supply Plan Update* was approved by the South Florida Water Management District (SFWMD) on February 15, 2007.

Residents of Monroe County obtain their water directly from the Florida Keys Aqueduct Authority (FKAA), which is responsible for ensuring that enough capacity is available for existing and future customers.

The Monroe County Water Supply Facilities Work Plan (Work Plan) will reference the initiatives already identified in FKAA's 20-year Water System Capital Improvement Master Plan. According to state guidelines, the Work Plan and associated comprehensive plan amendments must address the development of traditional and alternative water supplies, bulk sales agreements and conservation and reuse programs that are necessary to serve existing and new development for at least a 10-year planning period. The Monroe County Work Plan will have the same planning time schedule as FKAA's 20-year Water System Capital Improvement Master Plan.

The County's Work Plan is divided into six sections:

Section 1 – Introduction
Section 2 – Background Information
Section 3 – Data and Analysis
Section 4 – Work Plan Projects/Capital Improvement Element/Schedule
Section 5 – Goals, Objectives, Policies
Section 6 – Appendices

1.1 Statutory History

The Florida Legislature has enacted bills in the 2002, 2004, and 2005 sessions to address the state's water supply needs. These bills, particularly Senate Bills 360 and 444 (2005 legislative session), significantly changed Chapter 163 and 373 Florida Statutes (F.S.) by strengthening the statutory links between the regional water supply plans prepared by the water management districts and the comprehensive plans prepared by local governments. In addition, these bills established the basis for improving coordination between local land use planning and water supply planning.

1.2 Statutory Requirements

Each local government must comply with the following requirements:

1. Coordinate appropriate aspects of its comprehensive plan with the appropriate water management district's regional water supply plan, [163.3177(4)(a), F.S.]
2. Ensure that its future land use plan is based upon availability of adequate water supplies and public facilities and services [s.163.3177(6)(a), F.S., effective July 1, 2005]. Data and analysis demonstrating that adequate water supplies and associated public facilities will be available to meet projected growth demands must accompany all proposed Future Land Use Map amendments submitted to the Department for review. The submitted package must also include an amendment to the Capital Improvements Element, if necessary, to demonstrate that adequate public facilities will be available to serve the proposed Future Land Use Map modification.
3. Ensure that adequate water supplies and facilities area available to serve new development no later than the date on which the local government anticipates issuing a certificate of occupancy and consult with the applicable water supplier prior to approving a building permit, to determine whether adequate water supplies will be available to serve the development by the anticipated issuance date of the certificate of occupancy [s.163.3180 (2)(a), F.S., effective July 1, 2005]. This "water supply concurrency" is now in effect, and local governments should be complying with the requirement for all new development proposals. In addition, local governments should update their comprehensive plans and land development regulations as soon as possible to address these statutory requirements. The latest point at which the comprehensive plan must be revised to reflect the concurrency requirements is at the time the local government adopts plan amendments to implement the recommendations of the Evaluation and Appraisal Report (EAR).
4. For local governments subject to a regional water supply plan, revise the General Sanitary Sewer, Solid Waste, Drainage, Potable Water, and Natural Groundwater Aquifer Recharge Element (the "Infrastructure Element"), within 18 months after the water management district approves an updated regional water supply plan, to:
    a. Identify and incorporate the alternative water supply project(s) selected by the local government from projects identified in the updated regional water supply plan, or the alternative project proposed by the local government under s. 373.0361(7), F.S. [s. 163.3177(6)(c), F.S.];
    b. Identify the traditional and alternative water supply projects, bulk sales agreements, and the conservation and reuse programs necessary to meet current and future water use demands within the local government's jurisdiction [s. 163.3177(6)(c), F.S.]; and
    c. Include a water supply facilities work plan for at least a 10-year planning period for constructing the public, private, and regional water supply facilities identified in the element as necessary to serve existing and new development. [s. 163.3177(6)(c), F.S.] Amendments to incorporate the

water supply facilities work plan into the comprehensive plan are exempt from the twice-a-year amendment limitation. [s. 163.3177(6)(c), F.S.]

5. Revise the Five-Year Schedule of Capital Improvements to include any water supply, reuse, and conservation projects and programs to be implemented during the five-year period.

6. To the extent necessary to maintain internal consistency after making changes described in Paragraph 1 through 5 above, revise the Conservation Element to assess projected water needs and sources for at least a 10-year planning period, considering the appropriate regional water supply plan, the applicable District Water Management Plan, as well as applicable consumptive use permit(s). [s.163.3177 (6)(d), F.S.]

   If the established planning period of a comprehensive plan is greater than ten years, the plan must address the water supply sources necessary to meet and achieve the existing and projected water use demand for established planning period, considering the appropriate regional water supply plan. [s.163.3167 (13), F.S.]

7. To the extent necessary to maintain internal consistency after making changes described in Paragraphs 1 through 5 above, revise the Intergovernmental Coordination Element to ensure coordination of the comprehensive plan with applicable regional water supply plans and regional water supply authorities' plans. [s.163.3177(6)(h)1., F.S.]

8. Address in the EAR, the extent to which the local government has implemented the 10-year water supply facilities work plan, including the development of alternative water supplies, and determine whether the identified alternative water supply projects, traditional water supply projects, bulk sales agreements, and conservation and reuse programs are meeting local water use demands. [s.163.3191 (2)(1), F.S.]

2.0 BACKGROUND INFORMATION

2.1 Overview

Monroe County was incorporated in 1824, making it one of the first counties established in the State of Florida. Monroe County includes an approximately 112-mile long string of islands served by Highway US 1, an area of approximately 1,200,344 acres bounded by the Atlantic Ocean to the east and south, the Gulf of Mexico and Florida Bay to the west, and Miami-Dade County to the north. Incorporated municipalities within Monroe County encompass 12,678 acres, which include Key West, Marathon, Key Colony Beach, Layton, and Islamorada. A non-contiguous uninhabited mainland portion of Monroe County totaling 944,275 acres is located within Everglades National Park with another 126,437 acres located within Big Cypress National Park. Fort Jefferson/Dry Tortugas National Plarks total almost 64,379 acres. The remaining unincorporated area totals 51,747 acres or approximately 81 square miles.

Monroe County has substantially limited or restricted growth potential. Between 1990 and 2000, Monroe County population grew from 78,024 to 79,589, an increase of 2.0

percent. The U.S. Census Bureau 2007 population estimate for Monroe County is 73,223, an 8% decrease in population. Several factors may have contributed to this decrease, such as the high cost of living; the availability and cost of flood and windstorm insurance; and recent hurricane events. Future development potential and population growth is limited by the scarcity of vacant and developable land, together with growth restrictions dictated by the County's Residential Rate of Growth Ordinance (ROGO) and Non-Residential Rate of Growth Ordinance (NROGO). These ordinances were developed following designation of the Florida Keys Area of Critical State Concern and the completion of the Florida Keys Carrying Capacity Study. The County's total ROGO annual allocation for new residential building permits is 197. This provides the FKAA with a firm basis for predicting future water supply allocation needs.

Monroe County's Year 2010 Comprehensive Plan existing land use reveals that 10,790 acres or 17.6% of the total gross acreage in the County is dedicated to residential use. The remaining gross acreages are allocated to non-residential uses such as commercial (3.7%); industrial (0.8%); institutional (0.2%); agriculture (0.1%); recreation (2.9%); military (5.4%); conservation (33.7%); and undeveloped (34.4%). The County does not anticipate substantial increases in land area in the near future, unless there is policy decision from the municipalities for dissolution. In the meantime, the residential and non-residential growth rate is anticipated to be minimal for the next 10 to 20 years due to ROGO and NROGO.

2.2 Relevant Regional Issues

As the state agency responsible for water supply in the Lower East Coast planning area, the SFWMD plays a pivotal role in resource protection, through criteria used for Consumptive Use Permitting. As pressure increased on the Everglades ecosystem resource, the Governing Board initiated rule making to limit increased allocations dependent on the Everglades system. As a result, the Regional Water Availability Rule was adopted by the Governing Board on February 15, 2007 as part of the SFWMD's water use permit program. This reduced reliance on the regional system for future water supply needs, mandates the development of alternative water supplies, and an increase in the use of conservation and reuse techniques.

3. DATA AND ANALYSIS

3.1 Population Information

The County's existing and future population figures are derived from the Monroe County Growth Management Division and the US Census Bureau. Between 1990 and 2000, the Monroe County population grew from 78,024 to 79,589, an increase of 2.0 percent. The U.S. Census Bureau 2007 population estimate for Monroe County is 73,223, an 8% decrease in population. FKAA estimates that by 2010, the County's population is anticipated to increase to 83,400; 2015 to 83,799; and 2025 to 84,603 (represents an increase of 15.5% percent over the 2007 population). This relatively minor population growth is reflective of the fact that County development is substantially constrained, with

future development potential and population growth limited by the scarcity of vacant developable land, together with growth restrictions dictated by the County's Residential Rate of Growth Ordinance (ROGO) and Non-Residential Rate of Growth Ordinance (NROGO). These ordinances were developed following designation of the Florida Keys Area of State Critical Concern and the completion of the Florida Keys Carrying Capacity Study. The County's total ROGO annual allocation for new residential building permits is 197. This provides a firm basis for predicting future water supply allocation needs.

3.2 Maps of Current and Future Areas Served

The map depicting current and future County boundaries served by the FKAA is attached as Figure 1.

3.3 Potable Water Level of Service (LOS) Standard

Pursuant to the 2010 Comprehensive Plan, Monroe County has an adopted Potable Water Residential LOS of 66.6 gallons/capita/day and a non-residential LOS of 0.35 gallons/square foot/day. If the existing Monroe County population is 73,223, then 4.8 mgd (73,223 x 66.6) or more of water supply capacity is required to meet the adopted concurrency standard for residential potable water.

3.4 Population and Potable Water Demand Projections by Each Local Government or Utility

The FKAA 20-Year Water System Capital Improvement Plan, **Projected Finished Water Demand**, compares projected population and potable water demand for the period of 2005-2025 for the entire service area. In summary, FKAA's average daily water demand is expected to increase from 17.73 mgd in 2005 to 20.07 mgd in 2010; 22.08 mgd in 2015; 23.41 mgd in 2030; and 23.88 mgd in 2025.

3.5 Water Supply Provided by Local Government

Local Government does not supply potable water to Monroe County and its municipalities.

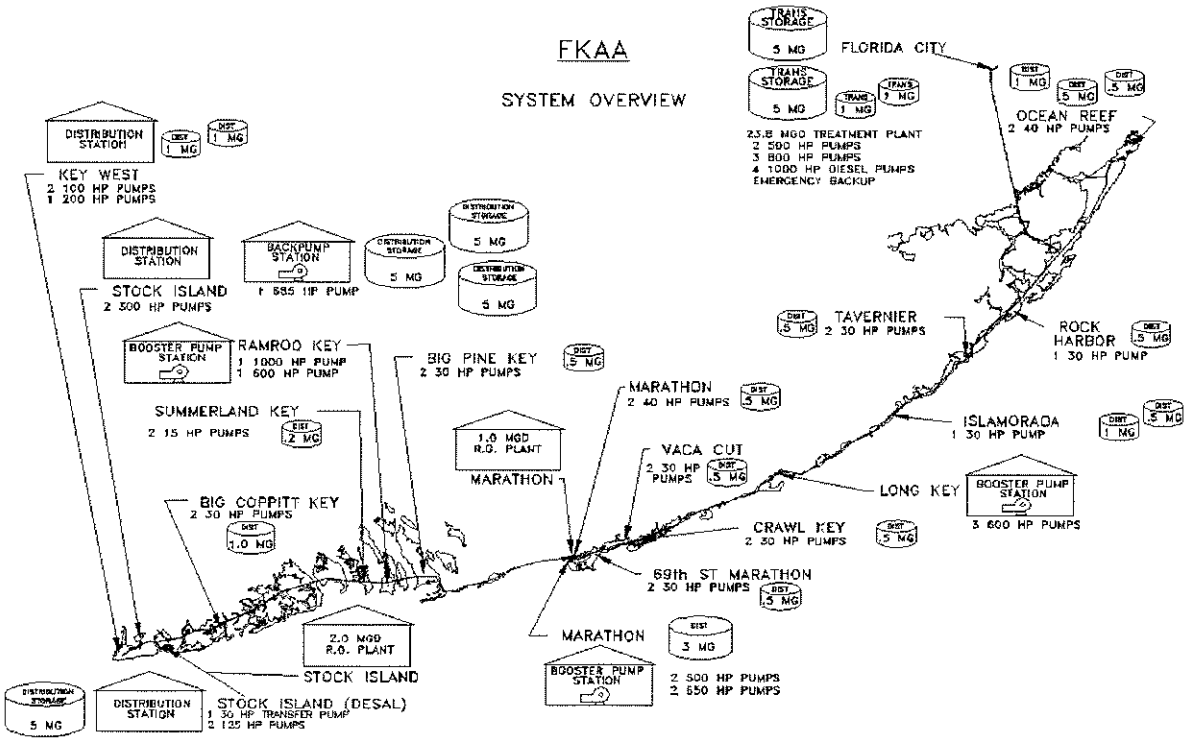
3.6 Water Supply Provided by Other Entities

The Florida Keys Aqueduct Authority (FKAA) is the sole provider of potable water in the Florida Keys. The Biscayne Aquifer is a shallow groundwater source and FKAA's primary water supply. The FKAA's wellfield is located in a pineland preserve west of Florida City in south Miami-Dade County. The FKAA's wellfield contains some of the highest quality groundwater in the State, meeting or exceeding all regulatory standards prior to treatment. Strong laws protect the wellfield from potentially contamination from adjacent land uses. Beyond the County's requirements, FKAA is committed to comply with and surpass all federal and state water quality standards and requirements.
The groundwater from the wellfield is treated at the J. Robert Dean Water Treatment Facility in Florida City, which currently has a maximum water treatment design capacity of 23.8 million gallons per day (MGD). The water treatment process consists primarily of lime softening, filtration, disinfection and fluoridation. The treated water is pumped to

the Florida Keys through a 130-mile long pipeline at a maximum pressure of 250 pounds per square inch (psi). The pipeline varies in diameter from 36 inches in Key Largo to 18 inches in Key West. The FKAA distributes the treated water through 648 miles of distribution piping ranging in size from ¾ inch to 12 inches in diameter.
The FKAA maintains storage tank facilities which provide an overall storage capacity of 45.2 million gallons system wide. The sizes of tanks vary from 0.2 to 5.0 millions gallons. These tanks are utilized during periods of peak water demand and serve as an emergency water supply. Since the existing transmission line serves the entire Florida Keys (including Key West), and storage capacity is an integral part of the system, the capacity of the entire system must be considered together, rather than in separate service districts.

Also, the two saltwater Reserve Osmosis (RO) plants, located on Stock Island and Marathon, are available to produce potable water under emergency conditions. The RO desalination plants have design capacities of 2.0 and 1.0 MGD of water, respectively.
At present, Key West and Ocean Reef are the only areas of the County served by a flow of potable water sufficient to fight fires. Outside of Key West, firefighters rely on a variety of water sources, including tankers, swimming pools, and salt water either from drafting sites on the open water or from specially constructed fire wells. Although sufficient flow to fight fires is not guaranteed in the County, new hydrants are being installed as water lines are replaced to make water available for fire-fighting purposes and pump station/tank facilities are being upgraded to provide additional fire flow and pressure..

Figure 3.1, FKAA Facilities



Demand for Potable Water

Figures 3.2, 3.3, and 3.4 provide a historical overview of the water demands in the FKAA service area, Water Use Permit (WUP) allocation limits, yearly percent change, and water allocation remaining.

In March 2008, South Florida Water Management District (SFWMD) approved the FKAA's modification of WUP 13-00005-5-W for a 20-year allocation from the Biscayne and Floridan Aquifers. The WUP provides an annual allocation of 8,751 Million Gallons (MG) or 23.98 MGD and a maximum monthly allocation of 809 MG with a limited annual withdrawal from the Biscayne Aquifer of 6,492 MG or 17.79 MGD and an average dry season (December 1st-April 30th) of 17.0 MGD.

This limitation is accomplished by using an alternative water source (blending of the Floridan Aquifer and operation of RO desalination plants), pressure reduction, public outreach, and assistance from municipal agencies in enforcing water conservation ordinances (i.e. irrigation ordinance, while the construction of a Floridian Aquifer Reverse Osmosis (RO) water treatment system. This system is designed to withdraw brackish water from the Floridian Aquifer which is approximately 1,000 feet below the ground surface, and treat to drinking water standards. The treated water from the Floridian Aquifer will be designed to meet current and future water

Figure 3.2 - Annual Water Withdrawals 1980 to 2007

Year	Annual Withdrawal (MG)	% Change	WUP Limit (MG)	WUP +/- Annual Allocation (MG)
1980	2,854.90	-	N/A	N/A
1981	3,101.10	8.60%	N/A	N/A
1982	3,497.30	12.80%	N/A	N/A
1983	3,390.20	-3.10%	N/A	N/A
1984	3,467.50	2.30%	4,450	982.5
1985	4,139.20	19.40%	4,450	310.8
1986	4,641.50	12.10%	5,110	468.5
1987	4,794.60	3.30%	5,110	315.4
1988	4,819.80	0.50%	5,110	290.2
1989	4,935.90	2.40%	5,110	174.1
1990	4,404.10	-10.80%	5,560	1,155.90
1991	4,286.00	-2.70%	5,560	1,274.00
1992	4,461.10	4.10%	5,560	1,098.90
1993	5,023.90	12.60%	5,560	536.1
1994	5,080.00	1.10%	5,560	480
1995	5,140.40	1.20%	5,778	637.6
1996	5,272.00	2.60%	5,778	506
1997	5,356.00	1.60%	5,778	422
1998	5,630.00	5.10%	5,778	148
1999	5,935.30	5.40%	5,778	-157.3
2000	6,228.00	10.60%	5,778	-450
2001	5,626.70	-9.70%	5,778	151.3
2002	6,191.16	10.03%	7,274	1083.29

2003	6,288.29	1.57%	7,274	985.84
2004	6,460.85	2.74%	7,274	813.15
2005	6,471.45	0.16%	7,274	802.55
2006	6,310.00	-2.49%	7,274	964
2007	5,846.32	-7.35%	7,274	1427.68

Source: Florida Keys Aqueduct Authority, 2008

Figure 3.3 - FKAA Annual Water Withdrawl

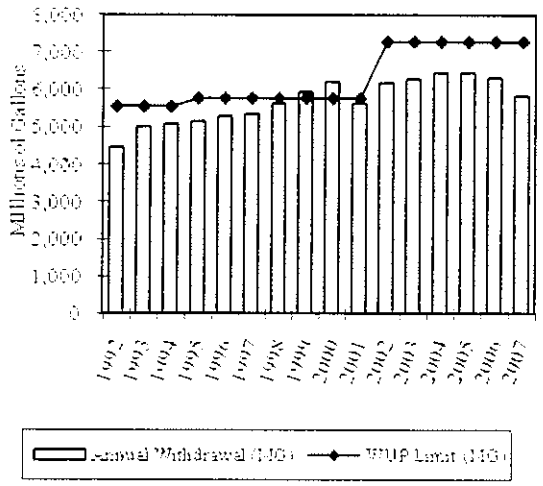
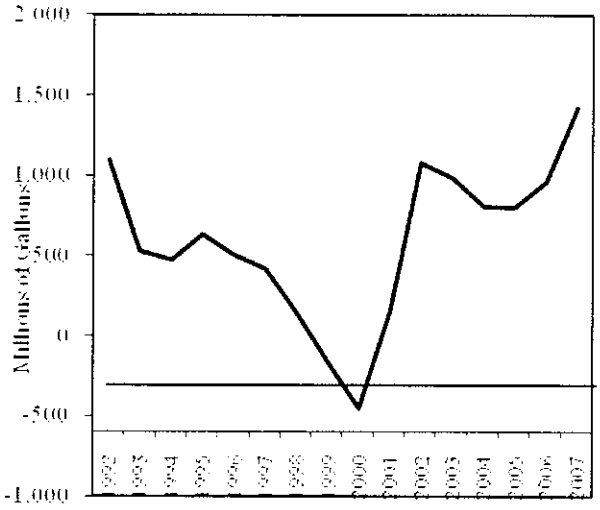


Figure 3.4 - WUP Remaining Allocation



Demands. The RO water treatment system is expected to be completed in 2009/2010 and provide an additional 6.0 MGD of potable water.

Figure 3.5 - Projected Water Demand in 2008			
	FKAA Permit Thresholds	**2007 Pumpage**	**2008 Water Demand Projected**
Annual Allocation			
Average Daily Withdrawal	23.98	16.02	16.28
Maximum Monthly Withdrawal	809.01	567.15	542.01
Annual Withdrawal	8,751	5,846	5,942
Biscayne Aquifer Annual Allocation/Limitations			
Average Daily Withdrawal	17.79	15.81	16.14
Average Dry Season Withdrawal*	17.00	16.62	16.02
Annual Withdrawal	6,492	5,771	5,891
Emergency RO WTP Facilities			
Kermit L. Lewin Design Capacity	2.00	0	0
Marathon RO Design Capacity	1.00	0	0

Demand for potable water is influenced by many factors, including the size of the permanent residents, seasonal populations and day visitors, the demand for commercial water use, landscaping practices, conservation measures, and the weather. In 2007, the FKAA distributed an annual average day of 16.02 MGD and a dry season average day of 16.62 MGD as shown in Figure 3.5. The maximum monthly water demand of 567.15 MG shown in Figure 3.5 occurred in March of 2007 Although water shortage/drought conditions and water restrictions imposed by SFWMD were effect in 2008, preliminary figures and projections for 2008 indicate a slight increase to an annual average daily demand of 16.28 MGD and decrease in maximum monthly demand 547.01 MG as compared to 2007 figures. Also, Figure 3.5 provides the water treatment capacities of the RO plants. The RO plants do not require a WUP because the water source is seawater. However, the RO plants are available for emergency water supply. Figure 3.6 indicates the amount of water available on a per capita basis. Based on Functional Population and permitted water withdrawal from Biscayne Aquifer, the average water available is above 100 gallons per capita (person). The 100 gallons per person per day standard is commonly accepted as appropriate, and reflected in Policy 701.1.1 of the Year 2010 Comprehensive Plan.

All figures are in millions of gallons

**Dry Season is defined as December thru April*

Source: Florida Keys Aqueduct Authority, 2008

Figure 3.6- Per Capita Water Availability

Year	Functional Population[1]	Average Daily Withdrawal (gallons)[2]	Average Water Available Per Capita (gallons)[2]
1998	151,163	15,830,000	104.72
1999	151,396	15,830,000	104.56
2000	153,080	15,830,000	103.41
2001	153,552	15,830,000	103.09
2002	154,023	19,930,000	129.40
2003	154,495	19,930,000	129.00
2004	154,966	19,930,000	128.61
2005	155,438	19,930,000	128.22
2006	155,937	19,930,000	127.81
2007	156,436	19,930,000	127.40
2008	156,935	17,786,301	113.34

Source: 1. Projected Permanent and Seasonal County-wide Population Update (1990-2015)- Monroe County Planning Department, 2007

2. Florida Keys Aqueduct Authority, 2008

Improvements to Potable Water Facilities

FKAA has a 20-year Water System Capital Improvement Master Plan for water supply, water treatment, transmission mains and booster pump stations, distribution mains, and facilities and structures, information technology, reclaimed water system, and Navy water system. The master plan was revised in 2008 to include the critical projects as

shown in Figure 3.7 summarized below. Figure 3.7 shows the schedule and costs projected for the capital improvements to the potable/alternative water systems planned by the FKAA. The total cost of the scheduled improvements is approximately $85 million over the next 5 years. These projects are to be funded by the newly revised water rate structure, long-term bank loans, and grants.

In 1989 FKAA embarked on the Distribution System Upgrade Program to replace approximately 190 miles of galvanized lines throughout the Keys. FKAA continues to replace and upgrade its distribution system throughout the Florida Keys and the schedule for these upgrades is reflected in their long-range capital improvement plan. The FKAA's Water Distribution System Upgrade Plan calls for the upgrade or replacement of approximately 20,000 feet of water main during fiscal year 2008.

In addition to improvements to the distribution system, FKAA also has significant improvements planned for the water supply and treatment system. FKAA is expanding the treatment capacity at the J. Robert Dean Water Treatment Plant to meet future water demands by construction of Floridan Aquifer supply wells and a 6.0 MGD RO Water Treatment Facility. Also, the FKAA is planning improvements to the transmission and distribution pump stations to improve flow/pressure.

Figure 3.7 - FKAA Projected 5 Year Capital Improvement Plan

	2008	2009	2010	2011	2012	Total
Water Supply						
Costs	2,000,000	1,700,000				3,700,000
Water Treatment						
Costs	15,763,000	22,265,000	2,200,000	1,300,000		41,528,000
Transmission Mains and Booster Pump Stations						
Costs	230,000	4,500,000	4,800,000	3,000,000		12,530,000
Distribution Mains						
Costs	2,200,000	1,200,000	1,000,000			4,400,000
Facilities and Structures						
Costs	5,000,000	3,095,000	3,000,000	1,600,000		12,695,000
Information Technology						
Costs	2,200,000	753,000				2,953,000
Reclaimed Water System						
Costs	3,663,500	500,000	1,000,000			5,163,500
Navy Water System						
Costs		600,000	600,000	600,000	600,000	2,400,000
TOTALS	***31,056,500***	***34,613,000***	***12,600,000***	***6,500,000***	***600,000***	***85,369,500***

Source: Florida Keys Aqueduct Authority, 2008

In summary, the average daily water demand is expected to slightly increase to 16.28 MGD over last year's of 16.02 MGD due to water shortage/drought conditions/water restriction and water conservation efforts. In conclusion with the construction of the new water supply wells and RO water treatment facility that will provide an additional capacity of 6.0 MGD, and the ability to operate the 3.0 MGD RO desalination plants for additional capacity, there is an adequate supply of water to meet current and future demand.

3.7 Conservation

One method of reducing water use and increasing the availability potable water is the implementation of Best Management Practices for water use. Mandatory outdoor water restrictions, water rate pricing and xeriscape landscaping that utilizes native flora can all assist in reducing potable water demand and the impacts of future growth.

3.7.1 County-Wide Issues

Water conservation is a one method available to promote the reduction of use and increased availability of potable water. FKAA implements a high base water rate for water use, which effectively deters wasteful water use. Implementation of mandatory watering restrictions also aid conserving water.

3.7.2 Local Government Specific Actions, Programs, Regulations, or Opportunities

Monroe County will coordinate future water conservation efforts with the FKAA and the SFWMD to ensure that proper techniques are applied. In addition, the County will continue to support and existing goals, objectives and policies in the comprehensive plan that promote water conservation in a cost-effective and environmentally sound manner. The County will also continue to actively support the SFWMD and FKAA in the implementation of new regulations or programs that are structured to conserve water during the dry season.

Monroe County also prepared an Interlocal Agreement between FKAA, Monroe County, and the municipalities of Key West, Marathon, Islamorada, Key Colony Beach, and Layton that will insure the availability of potable water prior to the issuance of a building permit (See Appendix 6.3). This Agreement is to be referenced in the Goal, Objective and Policies of the Monroe County Comprehensive Plan as proposed Policy 1301.1.16, which states:

> Monroe County shall initiate an interlocal agreement with the City of Islamorada, the City of Key Colony Beach, the City of Key West, the City of Layton, the City of Marathon and the Florida Keys Aqueduct Authority to establish a mechanism whereby the FKAA, the County and the Municipalities identify the water supply needed in the community to serve existing and new development, monitor the utilization of the water supply, and implement such alternative water supply

projects, traditional water supply projects conservation projects and reuse necessary to meet Monroe County's water supply needs.

3.8 Reuse

Water reuse is a method for supplementing water availability. Desalination at the source through reverse osmosis is presently incorporated within the design of new water treatment facilities that tap into the Floridan Aquifer. Some local communities, such as Key Colony Beach, use recycled water to irrigate its municipal golf course. However, the cost of developing a centralized collection, treatment, and distribution system for recycled water in a county such as Monroe that is less than 5 miles wide and 112 miles long, creates significant feasibility challenges.

3.8.1 Regional and County-wide Issues

State law supports reuse efforts. For the past years, Florida's utilities, local governments, and water management districts have led the nation in implementing water reuse programs that increase the quantity of reclaimed water used and public acceptance of reuse programs. Section 373.250(1) F.S. provides that "water reuse programs designed and operated in compliance with Florida's rules governing reuse are deemed protective of public health and environmental quality." In addition, Section 403.064(1), F.S., provides that "reuse is a critical component of meeting the State's existing and future water supply needs while sustaining natural systems."

The Monroe County supports water reuse initiatives under consideration by SFWMD and FKAA. Section 3.5.4 of FKAA's Work Plan states:

FKAA is currently, and will in the future, evaluate the feasibility of implementing wastewater reuse to offset some of the increasing potable water demands. However, the cost associated with the lack of large-volume Keys irrigation users (such as golf courses), and the limited availability of smaller Keys irrigation users who have suitable areas to irrigate make this alternative a challenge to implement in the Keys. Wastewater reuse would need to be subsidized for reuse to be a viable alternative water supply source to help offset increasing potable water demands. Although subsidized wastewater reuse is considered to have great potential to help offset increasing potable water demands, wastewater reuse is not currently included in this Master Plan as an alternative water supply source because actual quantities of reuse water have not been fully evaluated.

3.8.2 Local Government Specific Actions, Programs, Regulations, or Opportunities

The County will support the SFWMD and FKAA water reuse projects and implementation of new regulations or programs designed to increase the volume of reclaimed water used and public acceptance of reclaimed water.

Past studies that have reviewed the potential for water reuse in Monroe County include: The Duck Key Wastewater Collection System Alternative and Wastewater Reuse

Potential Study (November, 2005), the City of Key West Reuse Feasibility Study for Richard A. Heyman Environmental Protection Facility (May, 1996). These are attached as part of Appendix A. Both studies concluded that the costs were too prohibitive to be feasible at this time.

4.0 CAPITAL IMPROVEMENTS

4.1 Work Plan Projects

Exhibit 7-2 of the FKAA 20-year Capital Improvement Plan identifies all proposed work projects within Monroe County.

4.2.1 Capital Improvements Element/Schedule

Monroe County presently has an adopted Residential LOS of 66.6 gallons/capita/day and a non-residential LOS of 0.35 gallons/square foot/day. The County will continue to work with FKAA to insure that these adopted LOS are maintained. Adoption by reference if the FKAA 20-year Capital Improvements Plan will link water availability and programmed improvements with the County's Concurrency Management System through the establishment of a permit review and approval process that requires evidence of water supply availability prior to the issuance of a building permit and certificate of occupancy.

Section 7.2 of this plan, the 20-Year Capital Improvement Plan of the FKAA 20-Year Capital Improvement Plan, will serve as Monroe County's 10-year Water Supply Plan and CIE for potable water. Section 7.2 summarizes the FKAA Projected 5-Year Capital Plan.

5.0 GOALS, OBJECTIVES AND POLICIES

The adopted and presently effective Monroe County Year 2010 Comprehensive Plan includes several Goals, Objectives and Policies (GOPs) that implement water supply concurrency. These GOPs are located within the Potable Water Element, Intergovernmental Coordination Element, Conservation and Coastal Management Element, Future Land Use Element and Capital Improvements Element. The following GOPs are existing adopted policy statements. Proposed amended language or new GOPs are underlined.

5.1 Potable Water Element

GOAL 701
Monroe County shall support FKAA in the fulfillment of their statutory obligation and authority to provide for a safe, high quality and adequate supply, treatment, distribution, and conservation of potable water to meet the needs of present and future residents. [9J-5.011(2)(a)]

Objective 701.1
Monroe County shall ensure that at the time a development permit is issued, adequate potable water supply, treatment, and distribution facilities are available to support the

development at the adopted level of service standards concurrent with the impacts of such development. [9J-5.011(2)(b)2]

Policy 701.1.1
Monroe County hereby adopts the following level of service standards to achieve Objective 701.1 and shall use these standards as the basis for determining facility capacity and the demand generated by a development. [9J-5.011(2)(c)2d]

Level of Service Standards

1. Quantity:

Residential LOS	66.50 gal./capita/day
Non-Residential LOS	0.35 gal./sq. ft./day
Overall LOS	100.00 gal./capita/day
Equivalent Residential Unit (2.24 average persons per household x 66.5 gallons/capita/day)	149.00 gallons per day

2. Minimum Pressure:
   20 PSI at customer service

3. Minimum Potable Water Quality:
   Shall be as defined by the U.S. Environmental Protection Agency. (Part 143-National Secondary Drinking Standards, 40 CFR 143, 44FR 42198)

Policy 701.1.2
Monroe County will encourage FKAA to pursue a goal of decreasing unaccounted for water to 13 percent or lower by replacing deficient transmission and distribution lines and implementing meter improvements by the year 2005. Obtaining this goal will result in the following projected potable water consumption: [9J-5.011(2)(c)3; 9J-5.013(2)(c)4]

Residential Consumption	57.00 gal./capita/day
Non-Residential Consumption	0.29 gallons/sq ft/day
Overall Consumption	86.00 gal./capita/day

Policy 701.1.3
By January 4, 1997, Monroe County shall adopt Land Development Regulations which provide a Concurrency Management System (See Capital Improvements Policy 1401.4.5). The Concurrency Management System shall ensure that no permits will be issued for new development unless adequate potable water supply, treatment, and distribution facilities needed to support the development at the adopted level of service standards are available concurrent with the impacts of development. [9J-5.011(2)(c)1]

Policy 701.1.4
The Concurrency Management System adopted in accordance with Policy 701.1.3 shall specify procedures for updating facility demand and capacity information, utilizing data provided by the FKAA as potable water facilities are installed or upgraded. [9J-5.011(2)(c)1]

Policy 701.1.5
Monroe County shall amend the potable water quantity level of service upon attainment of the goal level of service as indicated in Policy 701.1.2.

Policy 701.1.6
Monroe County shall implement a concurrency management system that is consistent with the South Florida Water Management District Lower East Coast Regional Water Supply Plan and Florida Keys Aqueduct Authority 20-year Water System Capital Improvement Master Plan.

Policy 701.1.7
Monroe County shall prepare and maintain a 10-year Water Supply Work Plan that identifies alternative water supply projects, traditional water supply projects, conservation, and reuse necessary to meet the Monroe County Unincorporated Area water supply needs, consistent with the South Florida Water Management District Lower East Coast Regional Water Supply Plan and the Florida Keys Aqueduct Authority 20-year Water System Capital Improvement Master Plan.

Policy 701.1.8
Monroe Count shall update the 10-year Water Supply Work Plan every 5 years or within 18 months after the governing board of the South Florida Water Management District approves an updated regional water supply plan.

Objective 701.2
In coordination with Monroe County, the FKAA shall:

1. maintain a five year schedule of capital improvement needs for potable water supply, treatment and distribution, as identified through and in accordance with Policy 701.2.2;

2. identify responsible parties and agencies; and

3. identify time frames for completion.

4. The schedule will be updated annually consistent with Capital Improvements Policy 1401.1.2, and in accordance with the FKAA's annual budget process. [9J-5.011(2)(b)1 and 2]

Policy 701.2.1
The Florida Keys Aqueduct Authority (FKAA) shall continue to address the future needs of potable water supply, treatment and distribution facilities and evaluate options to satisfy these needs. FKAA and Monroe County shall evaluate and rank proposed

capital improvement projects, on the basis of delivery cost and other factors, considered for inclusion in the five-year schedule of capital improvement needs in accordance with the criteria contained in Policy 701.2.2 as well as the Goals, Objectives, and Policies of the Comprehensive Plan. [9J-5.011(2)(c)1 and 2]

Policy 701.2.2
Proposed capital improvement projects shall be evaluated and ranked according to the following priority level guidelines: [9J-5.011(2)(c)1 and 2]

Level One - Whether the project is consistent with the FKAA's enabling legislation.

Level Two - Whether the project is needed to protect public health and safety, provide facilities and services, or to preserve or achieve full use of existing facilities.

Level Three - Whether the project increases efficiency of use of existing facilities, prevents or reduces future improvement costs, provides service to developed areas lacking full service, or promotes in-fill development.

Level Four - Whether the project represents a logical extension of facilities and services within a designated service area.

Objective 701.3
Monroe County and the FKAA shall work cooperatively with the South Florida Water Management District (SFWMD), Dade County, and the Cities of Layton, Key Colony Beach and Key West to ensure the protection and availability of an adequate raw water supply at the Florida City Wellfield to meet the needs of Monroe County through the year 2010.

Policy 701.3.1
In coordination with Monroe County, the FKAA shall, as necessary, renew the Florida City Wellfield consumptive use permit issued by SFWMD. Alternative water sources such as reverse osmosis, cisterns and water re-use shall be evaluated and the most feasible solution implemented in the event that the necessary withdrawals from the Biscayne Aquifer are limited. [9J-5.011(2)(c)1; 9J-5.013(2)(c)4]

Policy 701.3.2
The Monroe County Growth Management Division shall provide technical assistance to the FKAA for the consumptive use permitting process. This technical assistance shall include providing information regarding future land use growth patterns, population trends, growth management policies and demand projections to ensure consistency between the FKAA permitting process and the Monroe County Comprehensive Plan. [9J-5.011(2)(c)1; 9J-5.013(2)(c)4]

Policy 701.3.3
The Monroe County Growth Management Division shall annually supply FKAA and SFWMD with the Concurrency Management Report prepared in accordance with Capital Improvements Policy 1401.4.9. These annual reports shall include the latest information on land use, population trends, and growth management policies as well as facility capacity analyses using data supplied by service providers. [9J-5.011(2)(c)1; 9J-5.013(2)(c)4]

Policy 701.3.4
Monroe County shall continue to reserve the right to review and comment on the SFWMD plans, such as water supply, cost, needs and sources, and water conservation plans, as they are developed.

Policy 701.3.5
Monroe County shall continue to coordinate with the Cities of Layton, Key Colony Beach and Key West and FKAA as necessary to facilitate system wide compatibility on such potable water-related issues as potable water levels of service, consumption projections, water conservation programs, and emergency management.

Objective 701.4
Monroe County shall work cooperatively with Dade County to encourage land use planning and development controls which shall protect the recharge area of the Florida City Wellfield from potential sources of groundwater contamination. [9J-5.011(2)(b)5; 9J-5.013(2)(b)2]

Policy 701.4.1
Protection of the Florida City Wellfield shall be accomplished through continued implementation of the Dade County Wellfield Protection Ordinance and the SFWMD Water Supply Policy Document. [9J-5.011(3)(c)1 and 4; 9J-5.013(2)(c)9]

Policy 701.4.2
By January 4, 1998, Monroe County shall seek an interlocal agreement with FKAA and Dade County. This agreement shall provide Monroe County with an opportunity to comment on land use and regulatory issues related to the Florida City Wellfield, aquifer and aquifer recharge area. It shall set forth procedures for review of land use and regulatory activities identified as having potentially significant impacts on the aquifer recharge and water supply systems especially concerning hazardous waste generation. Criteria for determination of significant impacts shall be included in the interlocal agreement. [9J-5.011(3)(c)1 and 4; 9J-5.013(2)(c)9]

Objective 701.5
FKAA shall supply adequate operating pressures in the transmission and distribution system to meet the adopted level of service standard specified in Policy 701.1.1(2) for the customer service connection. [9J-5.011(2)(b)1]

Policy 701.5.1
FKAA shall continue to maintain the transmission network and construct improvements to continue to provide a minimum operating pressure of 20 PSI at customer service. [9J-5.011(2)(c)2]

Objective 701.6
The FKAA shall continue to implement provisions to increase potable water storage through the Aquifer Storage Recovery System. [9J-5.011(2)(b)2]

Policy 701.6.1
By January 4, 1997, Monroe County shall, by resolution, support the development by FKAA of a total system storage capacity equal to 10 days of treated water flow at 50% of the annual average daily flow by the year 2005. [9J-5.011(2)(c)2d]

Policy 701.6.2
By January 4, 1997 Monroe County shall, by resolution, support the FKAA in their efforts to continue to develop an Aquifer Storage Recovery System, to aid in the provision of adequate storage capacity for emergency purposes. [9J-5.011(2)(c)1 and 2]

Objective 701.7
The FKAA shall continue to provide emergency service during electric power outages to the greatest extent feasible. [9J-5.011(2)(b)1]

Policy 701.7.1
In the event of a power outage, the emergency diesel pumps will deliver 15.6 MGD at 125 PSI during emergency conditions while the treatment plant will be operated by a 1,000 KVA diesel generator. [9J-5.011(2)(c)(2)d]

Objective 701.8
FKAA shall improve its capacity to provide for fire flows in the areas outlined in Policy 701.8.1 to ensure the protection of the public health, welfare and safety. [9J-5.011(2)(b)1]

Policy 701.8.1
By the year 2000, the FKAA, in accordance with its Capital Improvements Program, shall continue to upgrade the distribution system toward the goal of providing fire flow capabilities in the following areas:

Proposed Fire Flow Areas:

1. Key West and Stock Island (current fire flow areas)
2. Everywhere on US 1, except non-developable areas
3. Ocean Reef
4. Key Colony Beach
5. Layton
6. Marathon
7. Duck Key

8. Tavernier

Proposed Fire Flow Requirements by Land Use Zone:

1.	Suburban Residential	750 GPM
2.	Mobile Home, Recreational Vehicle	1,500 GPM
3.	Urban Commercial, Suburban Commercial, and Commercial	2,000 GPM

All commercial facilities not along US 1 shall provide "on site" fire abatement, as currently required. In all other areas the FKAA aqueduct system shall not be considered even as a future primary fire abatement source. However, all line upgrades shall be designed and constructed so as to provide approximately 250 GPM to extreme locations. [9J-5.011(2)(c)1 and 2]

Policy 701.8.2
By January 4, 1997, the Monroe County Office of the Fire Marshall, in accordance with the FKAA, shall develop fire districts for subsequent implementation if feasible. [9J-5.011(2)(c)1]

Policy 701.8.3
Since fire flow improvements in the areas identified by Policies 701.8.1 and 701.8.2 will result in significant fire insurance premium reductions for affected areas, charges for fire flow improvements in these areas shall be charged to these areas only, as opposed to general system absorption of such charges. [9J-5.011(2)(c)1]

Objective 701.9
Monroe County shall continue to assist the FKAA with water conservation efforts and assist in implementing the FKAA's Water Conservation Plan consistent with SFWMD's Water Shortage Plan and Water Conservation Program. The County shall implement Policies 701.9.1 to further conserve potable water use. [9J-5.011(2)(b)4; 9J-5.013(2)(b)2]

Policy 701.9.1
By January 4, 1997, the Monroe County Growth Management Division, with input from the FKAA and SFWMD, and other affected organizations shall adopt Land Development Regulations, which implement a xeriscape landscape ordinance, a permanent irrigation ordinance, and plumbing fixture efficiency standards consistent with the mandatory elements of the FKAA Water Conservation Plan and the SFWMD Model Landscape Code for South Florida. Prior to the adoption of the xeriscape landscape ordinance, permanent irrigation ordinance and plumbing efficiency standards, drafts of these ordinances and standards will be submitted to the SFWMD for review and comment, and when applicable the recommendations will be incorporated in the water conservation measures. [9J-5.011(2)(c)3; 9J-5.013(2)(c)4]

Policy 701.9.2
During the development of updated Land Development Regulations in accordance with Policy 701.9.1, the Monroe County Growth Management Division and FKAA shall

evaluate building codes, utility regulations, landscaping ordinances, and public education programs for implementation of water conservation measures. [9J-5.011(2)(c)3; 9J-5.013(2)(c)4]

Policy 701.9.3
In accordance with its Water Conservation Plan, the FKAA shall, with input from Monroe County, continue to implement a leak detection program and a conservation rate structure. Monroe County and the FKAA, with input from the SFWMD and other affected organizations, shall formulate and initiate implementation of a joint public education program for water conservation. [9J-5.011(2)(c)3; 9J-5.013(2)(c)4]

Policy 701.9.4
Monroe County and the FKAA shall continue to comply with SFWMD water use restrictions including all Phase I and Phase I (modified) water use restrictions when water shortages are declared by the SFWMD. [9J-5.011(2)(c)3; 9J-5.013(2)(c)4]

Policy 701.9.5
Monroe County shall coordinate with the Florida Health and Rehabilitative Services (HRS) to permit utilization of grey water storage systems and utilization for all exterior irrigation and flushing purposes. Upon receipt of authorization from HRS, policies shall be developed to implement the use of grey water storage systems where economically feasible. [9J-5.011(2)(c)3; 9J-5.013(2)(c)4]

Policy 701.9.6
Monroe County shall permit and encourage rainwater storage facilities for all household uses such as irrigation, car, patio, and boat washing, at a minimum. [9J-5.011(2)(c)3; 9J-5.013(2)(c)4]

Policy 701.9.7
By January 4, 1997, Monroe County shall adopt Land Development Regulations which establish a Permit Allocation and Point System for new residential and non-residential development (See Future Land Use Objectives 101.2, 101.3, and 101.5 and supporting policies). In developing the Point System, Monroe County shall consider assigning a positive point rating to developments utilizing alternative water collection systems such as cisterns, grey water reuse systems and wastewater treatment plant effluent reuse which conserve potable water supply. [9J-5.011(2)(c)3; 9J-5.013(2)(c)4]

Policy 701.9.8
As the water conservation measures set forth in Policies 701.9.1 through 701.9.7 are implemented, Monroe County shall re-evaluate the adopted potable water levels of service through the evaluation and appraisal report process as set forth in Chapter 163.3191 F.S.

Objective 701.10
In coordination with the FKAA, Monroe County shall continue to maximize the use of existing facilities and discourage urban sprawl through implementation of Potable Water Policies 701.10.1 through 701.10.5. [9J-5.011(2)(b)3]

Policy 701.10.1
By January 4, 1998, Monroe County shall evaluate existing FKAA policies related to identification and adoption of capital improvements. Improvements consistent with achieving Objective 701.10 shall be incorporated into Monroe County's annual Concurrency Management Report prepared in accordance with Capital Improvements Policy 1401.4.9. [9J-5.011(2)(c)1]

Policy 701.10.2
All FKAA facility expansions shall be consistent with the Future Land Use Map the Goals, Objectives, and Policies of the Comprehensive Plan, and adopted levels of service. [9J-5.011(2)(c)1]

Policy 701.10.3
Monroe County shall review and comment on the FKAA Capital Improvements Plan for Comprehensive Plan consistency prior to inclusion in the annual Concurrency Management Report prepared in accordance with Capital Improvements Policy 1401.4.9. [9J-5.011(2)(c)1]

Policy 701.10.4
The FKAA, through its fee schedule, shall continue to assess charges for new units for meter fees, tapping fees, service charges and water main extension costs in order to promote maximizing the use of existing facilities and discouraging urban sprawl. [9J-5.011(2)(c)1]

Policy 701.10.5
The FKAA shall continue its policy of not providing for water connection services in National Wildlife Refuge areas or hardwood hammock areas within its jurisdiction as specified in FKAA's enabling legislation and the FKAA Policy and Procedure Handbook, Chapter 48-7. [9J-5.011(2)(c)

5.2 Intergovernmental Coordination Element

Policy 1301.1.4
By January 4, 1998, Monroe County shall initiate an interlocal agreement with Dade County providing for notification and review procedures in order to provide a mechanism for Monroe County comment on land use and regulatory issues concerning the potable water wellfield, aquifer, and aquifer recharge areas. [9J-5.015(3)(b)2]

Policy 1301.1.5
Monroe County and the Florida Keys Aqueduct Authority (FKAA) shall work cooperatively with the SFWMD and Dade County to ensure the protection and availability of an adequate raw water supply to meet Monroe County needs through 2010 from the Florida City well field by:

1. renewing of consumptive use permit by January 4, 1998 and thereafter as required by SFWMD; and

2. if necessary, conducting an exploratory study of the feasibility of reverse osmosis and other technologies. [9J-5.015(3)(b)2]

Policy 1301.1.7
By January 4, 1997 and each year thereafter on an ongoing basis Monroe County and FKAA will coordinate an evaluation and appraisal of the Monroe County Comprehensive Plan, adopted levels of service, annual public facility capacity analysis, and the Consumptive Use Permit. [9J-5.015(3)(c)1]

Policy 1301.1.15
Monroe County shall consult with the Florida Keys Aqueduct Authority to confirm the availability of water supply prior to the issuance of a building permit.

Policy 1301.1.16
Monroe County shall initiate an interlocal agreement with the Florida Keys Aqueduct Authority (FKAA) to establish a mechanism whereby the FKAA and the County identify the availability of water supply needed to serve existing and new development within the Unincorporated Area, monitor the utilization of the water supply, and implement such alternative water supply projects, traditional water supply projects, conservation projects, and reuse necessary to meet Monroe County's water supply needs.

Objective 1301.5
Ensure that implementation, monitoring, and evaluation of the Monroe County Comprehensive Plan is coordinated with the plans and programs of ... The Florida Keys Aqueduct Authority ... and other providers of health, safety, and educational services not having regulatory authority over the use of land. [9J-5.015(3)(b)1]

Policy 1301.5.2
Monroe County shall continue to share data with the City Electric Service, Florida Keys Aqueduct Authority, the Monroe County Property Appraiser, SFWMD and other agencies for use in GIS applications. [9J-5.015(3)(c)3]

Policy 1301.5.7
Monroe County shall, on an annual basis during the preparation of the Concurrency Management Report, coordinate with the Municipal Services District, the Florida Keys Aqueduct Authority, City Electric and the Florida Keys Electric Cooperative to determine the acreage and location of land needed to accommodate projected service expansions. [9J-5.015(3)(b)1]

5.3 Conservation and Coastal Management Element

GOAL 211
Monroe County shall conserve and protect potable water resources and cooperate with regional efforts to ensure the continued availability of quality potable water. [9J-5.011(2)(a); 9J-5.013(2)(a)]

Objective 211.1
Monroe County shall work cooperatively with Dade County to encourage land use planning and development controls which shall protect the recharge area of the Florida City Wellfield from potential sources of groundwater contamination and saltwater intrusion. (See Potable Water Objective 701.4 and related policies). [9J-5.013(2)(b)2]

Objective 211.2
Monroe County shall continue to assist the FKAA with water conservation efforts and to assist in implementing the FKAA's Water Conservation Plan, consistent with SFWMD's Water Shortage Plan and Water Consumption Guidelines, and shall implement measures to further conserve potable water. (See Potable Water Objective 701.9 and related policies). [9J-5.013(2)(b)2]

5.4 Future Land Use Element

GOAL 101
Monroe County shall manage future growth to enhance the quality of life, ensure the safety of County residents and visitors, and protect valuable natural resources. [9J-5.006(3)a]

Objective 101.1
Monroe County shall ensure that at the time a development permit is issued, adequate public facilities are available to serve the development at the adopted level of service standards concurrent with the impacts of such development. [9J-5.006(3)(b)1]

Policy 101.1.1
Monroe County shall adopt level of service (LOS) standards for the following public facility types required by Chapter 9J-5, F.A.C: roads, sanitary sewer, solid waste, drainage, potable water, parks and recreation, and paratransit. The LOS standards are established in the following sections of the Comprehensive Plan:

2. The LOS for potable water is established in Potable Water Policy 701.1.1;

5.5 Capital Improvements Element

Objective 1401.4
Monroe County shall coordinate land use decisions and fiscal resources with a schedule of capital improvements in order to maintain the adopted level of service (LOS) standards for both previously issued development orders and future development. [9J-5.016(3)(b)3 and 5]

Policy 1401.4.1
Monroe County shall adopt level of service (LOS) standards for the following public facility types: roads, sanitary sewer, solid waste, drainage, potable water, and parks and recreation. The LOS standards are established in the following sections of the Comprehensive Plan:

2. The LOS for potable water is established in Potable Water Policy 701.1.1;

Policy 1401.4.4
Public facilities and services needed to support development shall be available concurrent with the impacts of development, in accordance with the adopted levels of service referenced in Policy 1401.4.1 and Chapter 9J-5.0055, F.A.C. Development approval may be phased to allow the provision of public facilities and services necessary to maintain the adopted levels of service. [9J-5.016(3)(c)6]

Policy 1401.4.5
Monroe County hereby adopts a Concurrency Management System to ensure that facilities and services needed to support development are available concurrent with the impact of development. The Concurrency Management System shall ensure that the County shall issue no development order or permit which results in a reduction in the level of service (LOS) below the adopted LOS standards referenced in Policy 1401.4.1 for those public facilities that are subject to the system. The guidelines established in Policies 1401.4.6, 1401.4.7, 1401.4.8, 1401.4.9, and 1401.4.10 shall ensure that concurrency is successfully implemented.

Policy 1401.4.6
The following guidelines identify the stages in the development review process when the test for concurrency must be met.

1. Preliminary Development Order Stage - A preliminary development order is a development order that precedes the issuance of a building permit, such as a subdivision plat, development plan, certificate of compliance, conditional use permit, or development of regional impact development order. A proposed development must receive a conditional concurrency determination prior to receiving a preliminary development order.

2. Final Development Order Stage - A final development order is a building permit or any other development permit authorizing the construction or expansion of a building, an increase in development intensity, or a change of use requiring a new certificate of occupancy. A proposed development must receive a final concurrency determination prior to receiving a final development order.

Policy 1401.4.8
The following guidelines identify the minimum criteria necessary to meet the concurrency requirements of each public facility type.

1. The concurrency requirements for roads, potable water, solid waste, sanitary sewer, and drainage facilities and services shall be satisfied if one or more of the following conditions are met:

   a) the necessary facilities and services are in place at the time a development permit is issued; or

   b) the development permit is issued subject to the condition that the necessary facilities and services will be in place when the impacts of the development occur, or

   c) the necessary facilities are under construction at the time a permit is issued; or

   d) an enforceable development agreement guarantees that the necessary facilities and services will be in place when the impacts of the development occur. An enforceable development agreement may include, but is not limited to, development agreements pursuant to section 163.3220, F.S., or an agreement or development order issued pursuant to Chapter 380, F.S.

Policy 1401.4.10

Monroe County shall use the following guidelines for interpreting and applying level of service standards to development order applications. For the purposes of this policy, reserve capacity refers to the capacity of existing public facilities plus the capacity of public facilities which do not exist but which meet the applicable requirements of Policy 1401.4.7, less the existing demand for those facilities and the demand expected to be created for those facilities by approved but unbuilt development as determined by the databases in Policy 1401.4.9.

1. Potable Water- The County shall not render a final concurrency determination unless the quantity of water available under the FKAA Consumptive Use Permit meets or exceeds the estimated water demand of the proposed development together with the estimated water demand of all existing and committed development.

6.4 REFERENCES

6.5 Florida Keys Aqueduct Authority 20-year Water System Capital Improvement Master Plan, CH2MHILL, December 2006

6.6 Lower East Coast Water Supply Plan 2005-2006 Update, South Florida Water Management District

6.7 FKAA Projected 5-Year Capital Improvement Plan